

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

What is claimed is:

1. A method for performing endoluminal fundoplication of a patient's esophagus and stomach, comprising:

forming an intussusception of the esophagus into the stomach by
5 pulling a selected portion of the esophagus into the stomach, and by
displacing a fundus portion of the stomach towards the esophagus;

placing a fastener across the intussusception, said fastener
maintaining an esophageal wall and a gastric wall forming the intussusception
adjacent to one another; and

10 injecting a bonding agent between the esophageal wall and a gastric
wall to bond the intussusception.

2. The method according to claim 1, further comprising removing the
fastener after bonding the intussusception.

15 3. The method according to claim 1, further comprising the preliminary
steps of:

introducing through the esophagus and positioning an endoscope
device adjacent a gastroesophageal junction;

20 extending from the endoscope device a grasping device adapted to
grasp and pull the opening portion of the esophagus; and

extending from the endoscope device a tissue displacement device
adapted to displace the fundus portion of the stomach.

4. The method according to claim 1, further comprising:
introducing through the esophagus and positioning a fastener delivery
device adjacent to the intussusception at a desired fastening location;
delivering the fastener from the delivery device to attach the
5 esophageal wall to the gastric wall.

5. The method according to claim 4, further comprising;
extending a hypotube from the fastener delivery device through the
esophageal wall and the gastric wall forming the intussusception;
10 deploying a distal end of the fastener to prevent withdrawal of the
fastener;
withdrawing the hypotube from the intussusception; and
deploying a proximate end of the fastener to maintain the esophageal
wall adjacent to the gastric wall.

15 6. The method according to claim 4, further comprising repeating the
positioning and delivering steps a selected number of times.

7. The method according to claim 6, further comprising successively
20 positioning the delivery device and delivering the fastener at selected
positions around a circumference of the intussusception.

8. The method according to claim 5, wherein the deploying steps further

comprise inflating bladders disposed at the distal and at the proximate end of the fastener.

5 9. The method according to claim 5, wherein the deploying steps further comprise extending deformable portions disposed at the distal and proximate ends of the fastener.

10 10. The method according to claim 1, wherein the injecting step further comprises injecting at least one of an adhesive and a sclerosant agent.

10

11. The method according to claim 1, wherein the forming an intussusception and the placing a fastener steps further comprise:

15 introducing through the esophagus and placing adjacent a gastroesophageal junction a fastening device having a gripping portion and a tissue displacing portion;

gripping an opening portion of the esophagus with the gripping portion, and pulling the opening portion into the stomach;

20 moving a fundus portion of the stomach towards the esophagus by pivoting the tissue displacing portion towards an anvil portion of the fastening device, such that the gastric wall and the esophageal wall are between the anvil portion and the pivoted tissue displacing portion;

driving a barbed portion of a fastener disposed on the tissue displacing portion through the gastric wall and the esophageal wall; and

securing the barbed portion of the fastener to a mating washer portion of the fastener disposed on the anvil portion.

12. A method for performing endoluminal fundoplication comprising the steps of:

inserting an endoscope through a patient's esophagus into the patient's stomach;

inserting a grasping device through the esophagus to a position adjacent the gastroesophageal junction;

inserting a tissue displacement device through the esophagus to the position adjacent the gastroesophageal junction;

grasping and moving into the stomach a selected portion of the esophagus with the grasping device, to form an esophageal wall;

displacing a fundus portion of the stomach towards the esophageal wall with the tissue displacement device, to form a gastric wall;

inserting a fastening device through the esophagus to a position adjacent the gastroesophageal junction; and

deploying a fastener from the fastening device, to attach the esophageal wall to the gastric wall.

13. The method according to claim 12, further comprising injecting one of an adhesive and a sclerosant agent between the gastric wall and the esophageal wall.

14. The method according to claim 12, further comprising inserting an overtube over the endoscope, defining a channel for insertion of at least one of the grasping device, tissue displacement device, and fastening device.

5 15. The method according to claim 12, further comprising rotating the fastening device by a selected rotation, and repeating the deploying step.

16. The method according to claim 15, wherein the rotating step comprises rotating the fastening device by about 30 degrees.

10

17. The method according to claim 12, further comprising removing the fastener after bonding of the gastric wall to the esophageal wall.

15

18. A device for performing endoluminal fundoplication of a patient's esophagus and stomach, comprising:

a flexible tube having a distal end adapted for insertion in the stomach through the esophagus;

a tissue grasping device disposed at the distal end of the flexible tube, adapted to grasp a selected portion of the esophagus;

20

a tissue displacement device disposed adjacent the tissue grasping device, adapted to move a fundus portion of the stomach towards the esophagus; and

an anvil portion, pivotable relative the tissue displacement portion,

wherein the tissue displacement device and the anvil portion releasably carry complementary portions of a fastener, such that said complementary portions are joined when the fundus portion is moved towards the esophagus.

5 19. The device according to claim 18, further comprising a barbed portion of the flexible tube adapted to move a selected portion of the esophagus.

10 20. The device according to claim 18, wherein the tissue grasping device comprises a pair of jaws operable independently of the tissue displacement device.

21. The device according to claim 18, wherein the fastener comprises a barbed portion and a mating washer portion.

15 22. The device according to claim 18, wherein pivoting motion of the tissue displacement device and the anvil portion places the selected portion of the esophagus and the moved fundus portion of the stomach between the tissue placement device and the anvil portion.